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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/740,265	12/17/2003	Patrick N. Matthews	T-6265	1917

34014 7590 05/01/2006

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EXAMINER
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MCAVOY, ELLEN M

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 05/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/740,265	<b>Applicant(s)</b> MATTHEWS ET AL.	
	<b>Examiner</b> Ellen M. McAvoy	<b>Art Unit</b> 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 February 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>19 January 2006</u> . | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 112***

Claims 1-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Independent claim 1 has been amended to include the phrase “the water being added being free of substantial quantities of hydrate inhibitors selected from the group of alcohols, glycols, and surfactant or polymeric hydrate inhibitors” which is considered to be NEW MATTER. There is no support in the specification for the amendment. As set forth in the MPEP 2173.05(i), any negative limitation or exclusionary proviso must have basis in the original disclosure. And that, the mere absence of a positive recitation is not basis for an exclusion. Any claim containing a negative limitation which does not have basis in the original disclosure should be rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

***Claim Rejections - 35 USC § 102/103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Colle et al (5,491,269), Colle (6,222,083) and Peiffer et al (6,194,622), considered separately.

Applicants' arguments filed 16 February 2006 have been fully considered but they are not persuasive. As previously set forth, Colle et al (5,491,269) [Colle '269] disclose a method for inhibiting the formation of clathrate hydrates in a pipe used to convey petroleum oil or natural gas. For example, flow restrictions arising from partial or complete blockages in a fluid stream can arise as clathrate hydrates adhere to and accumulate along the inside wall of the pipe used to convey the fluid. The method comprises treating the petroleum oil or natural gas fluid inside the pipe with an inhibitor comprising a substantially water soluble polymer produced from a cyclic imino ether. The water soluble polymer may be introduced into the petroleum fluid stream in a carrier solvent which includes water, brine, alcohol, sea water and mixtures thereof. See column 2, line 23 to column 3, line 19. Colle '269 teaches that as the inhibitor solution or mixture is substantially dissolved in the aqueous phase or dispersed in the fluid stream it reduces the rate that clathrate hydrates are formed, and thereby reducing the tendency for a flow restriction to occur. Although the specific amounts of water in some of the dependent claims is not set forth in the prior art, Colle '269 teaches that any convenient concentration of inhibitor in the carrier solvent can be used. Applicants' method claims differ by not adding the polymer component to the solvent. However, the open-ended claim language "comprising" allows for the

addition of the polymer to the water component of the claims. Although the specific system for preventing the formation of hydrate blockage in a flow line is not set forth in the prior art, Colle '269 teaches that the inhibitor mixture is introduced into the aqueous phase of the petroleum fluid using mechanical equipment which is apparent to those skilled in the art. See column 3, lines 35-42.

Applicants argue that:

“Claim 1 has been amended to recite that the water added to the hydrocarbon containing fluid should be free of substantial quantities of hydrate inhibitors chosen from the group of alcohols, glycols, and surfactant or polymeric-based hydrate inhibitors.” And that “The water added to the hydrocarbon containing fluid is the primary mechanism to prevent formation blockage in a flow line rather than relying on substantial quantities of hydrate inhibitors, including alcohols, glycols, or other surfactant or polymeric-based hydrate inhibitors. The cited references teach away, rather than suggest, the invention as recited in claim 1, by teaching that polymeric based hydrate inhibitors, inherently in substantially large enough quantities to be effective, should be the source preventing hydrate formation and thus blockage in a flow line.”

This is not deemed to be persuasive because the amendment to claim 1 states that the water being added is “free of substantial quantities” of hydrate inhibitors. It is not clear what amounts of hydrate inhibitors are considered to be substantial. Colle '269 teaches that the hydrate inhibitors are added to water in an amount of about 0.01% by weight of the water present in the oil or gas stream. See column 2, lines 13-18, and column 4, lines 4-7. The examiner is of the position that 0.01% by weight is not a “substantial quantity”. Although Colle '269 teaches that polymeric based hydrate inhibitors are added to a solvent such as water, it is not clear that only the added hydrate inhibitors, and not the water, result in the prevention of blockage in the flow line.

As also previously set forth, Colle '083 discloses a method for inhibiting the formation of gas hydrates in a petroleum fluid having hydrate-forming constituents. For example, flow restrictions arising from partial or complete blockages in a fluid stream can arise as gas hydrates adhere to and accumulate along the inside wall of the pipe used to convey the fluid. The method comprises treating the petroleum fluid inside the pipe with an inhibitor comprising substantially water soluble homopolymers and copolymers of N-acyldehydroalanine derivatives. The water soluble polymers may be introduced into the petroleum fluid stream in a carrier solvent which includes water, brine, alcohol, sea water and mixtures thereof. See column 3, line 62 to col. 4, line 63. Colle '083 teaches that as the inhibitor solution or mixture is substantially dissolved in the aqueous phase or dispersed in the fluid stream it reduces the rate that gas hydrates are formed, and thereby reducing the tendency for a flow restriction to occur. Although the specific amounts of water in some of the dependent claims is not set forth in the prior art, Colle '083 teaches that any convenient concentration of inhibitor in the carrier solvent can be used. Applicants' method claims differ by not adding the polymer component to the solvent. However, the open-ended claim language "comprising" allows for the addition of the polymer to the water component of the claims. Although the specific system for preventing the formation of hydrate blockage in a flow line is not set forth in the prior art, Colle '083 teaches that the inhibitor mixture is introduced into the aqueous phase of the petroleum fluid using mechanical equipment which is apparent to those skilled in the art. See column 4, line 64 to col. 5, line 3.

In addition to the above argument, applicants argue that:

“Claim 14 has been amended to recite that the water to be added to the hydrocarbon containing fluid comes from a water injection conduit which is in fluid connection with one of a source of sea water, fresh water, a subsea well or water produced from fluids from a hydrocarbon producing well bore. Claims 21-23 more specifically recite the source from which a water injection conduit may receive its water.”

This is not deemed to be persuasive because, as set forth above, Colle teaches that suitable solvents include, but are not limited to, water, brine and sea water. The examiner is of the position that it would have been obvious to the skilled artisan to have followed the teachings of the prior art and to have employed a conduit to a suitable water source if so desired. Colle '083 teaches that an aqueous phase is preferably present at the location the inhibitor solution is introduced into the fluid.

As also previously set forth, Peiffer et al [“Peiffer”] also disclose a method for inhibiting the formation of gas hydrates in a petroleum fluid having hydrate-forming constituents. The method comprises treating the petroleum fluid inside the pipe with an inhibitor comprising substantially water soluble homopolymers and copolymers of surfactant monomers. The water soluble polymers may be introduced into the petroleum fluid stream in a carrier solvent which includes water, brine, alcohol, sea water and mixtures thereof. See column 3, line 62 to col. 4, line 62. Peiffer teaches that as the inhibitor solution or mixture is substantially dissolved in the aqueous phase or dispersed in the fluid stream it reduces the rate that gas hydrates are formed, and thereby reducing the tendency for a flow restriction to occur. Although the specific amounts of water in some of the dependent claims is not set forth in the prior art, Peiffer teaches that any

convenient concentration of inhibitor in the carrier solvent can be used. Applicants' method claims differ by not adding the polymer component to the solvent. However, the open-ended claim language "comprising" allows for the addition of the polymer to the water component of the claims. Although the specific system for preventing the formation of hydrate blockage in a flow line is not set forth in the prior art, Peiffer teaches that the inhibitor mixture is introduced into the aqueous phase of the petroleum fluid using mechanical equipment which is apparent to those skilled in the art. See column 4, line 63 to column 5, line 2.

In addition to the above arguments, applicants argue that:

"Claim 24 specifies that water should be added to enhance the water cut of the water cut enhanced hydrocarbon containing fluid so that the water cut is greater than 50%. Claim 25 requires that sufficient water is added such that hydrate formation is self limiting as hydrocarbon hydrate forming components in the water cut enhanced hydrocarbon containing fluid are exhausted through the formation of hydrate particles. Claim 26 provides that sufficient water is added such that the hydrocarbon containing fluid is converted from a water-in-oil emulsion to a water-continuous emulsion."

This is not deemed to be persuasive because the applied prior art references teach adding a minor amount, as low as 0.01%, of a hydrate inhibitor additive to a solvent, such as water, which is then added to a petroleum fluid having hydrate-forming constituents. Although the prior art does not specify that, at the point of introduction of the water solution into the petroleum fluid, the water cut is greater than 50%, it is not clear how this requirement of the claims results in an unobvious patentable invention over that which is taught in the prior art.



Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

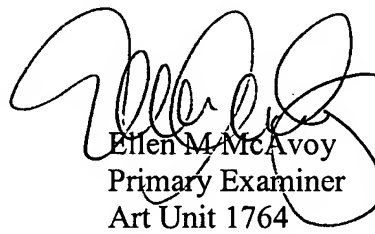
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen M. McAvoy whose telephone number is (571) 272-1451. The examiner can normally be reached on M-F (7:30-5:00) with alt. Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ellen M. McAvoy  
Primary Examiner  
Art Unit 1764

EMcAvoy  
April 26, 2006